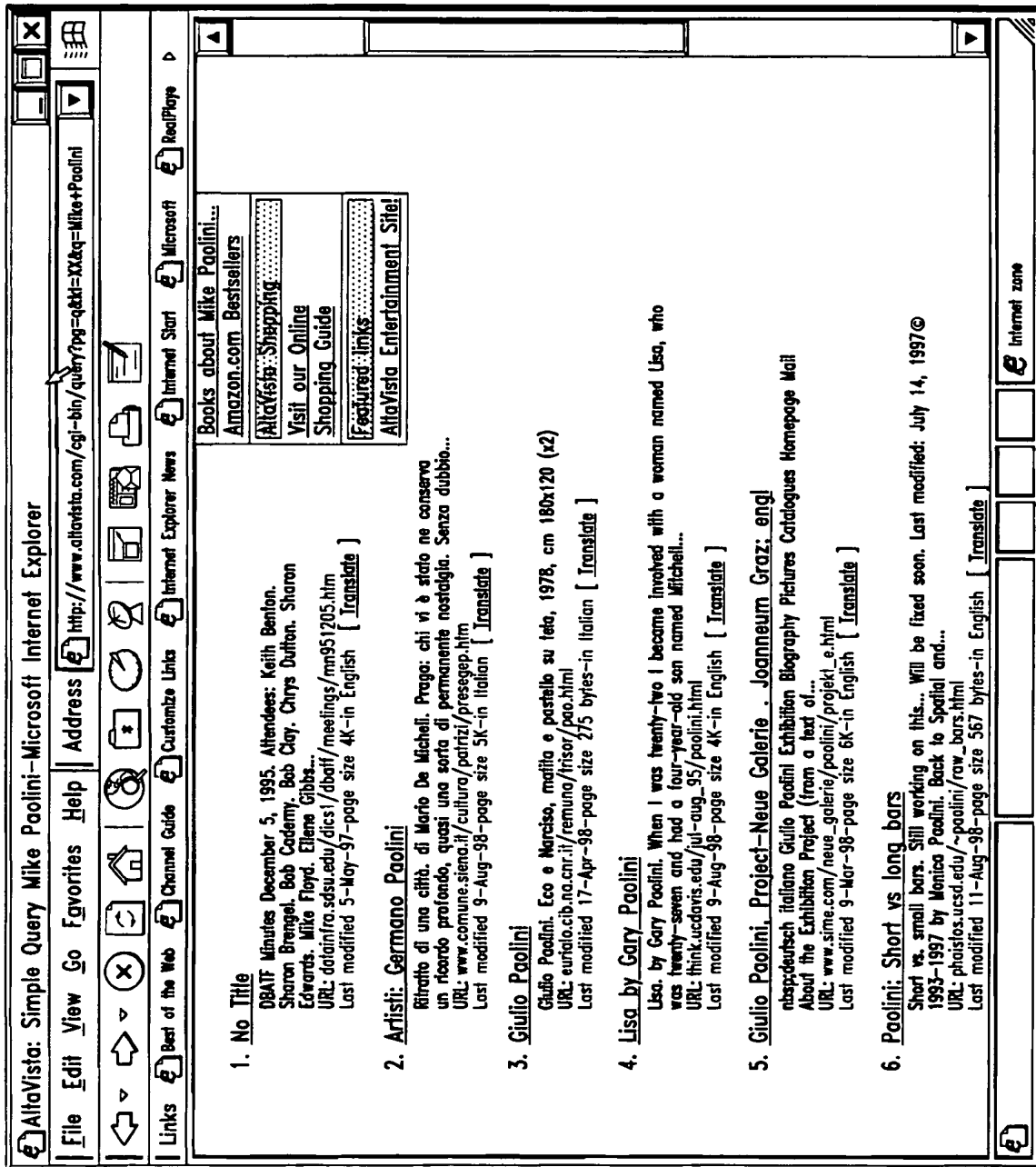10/662,611
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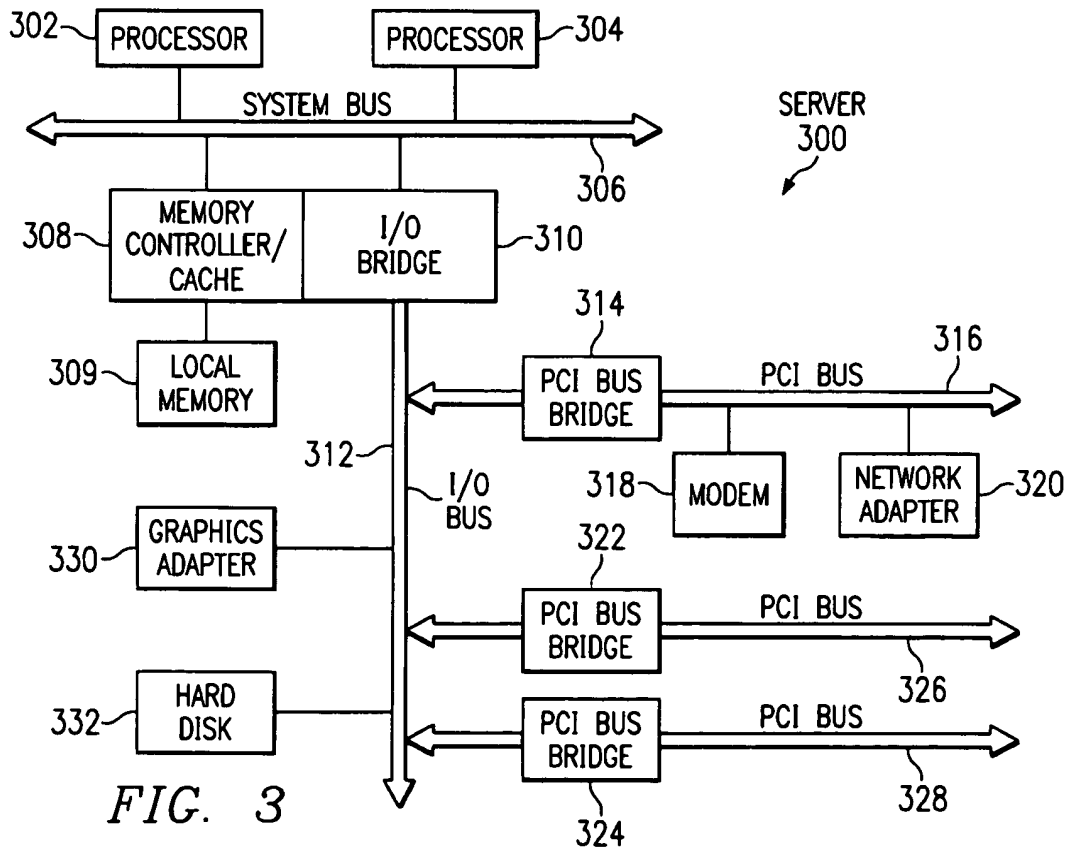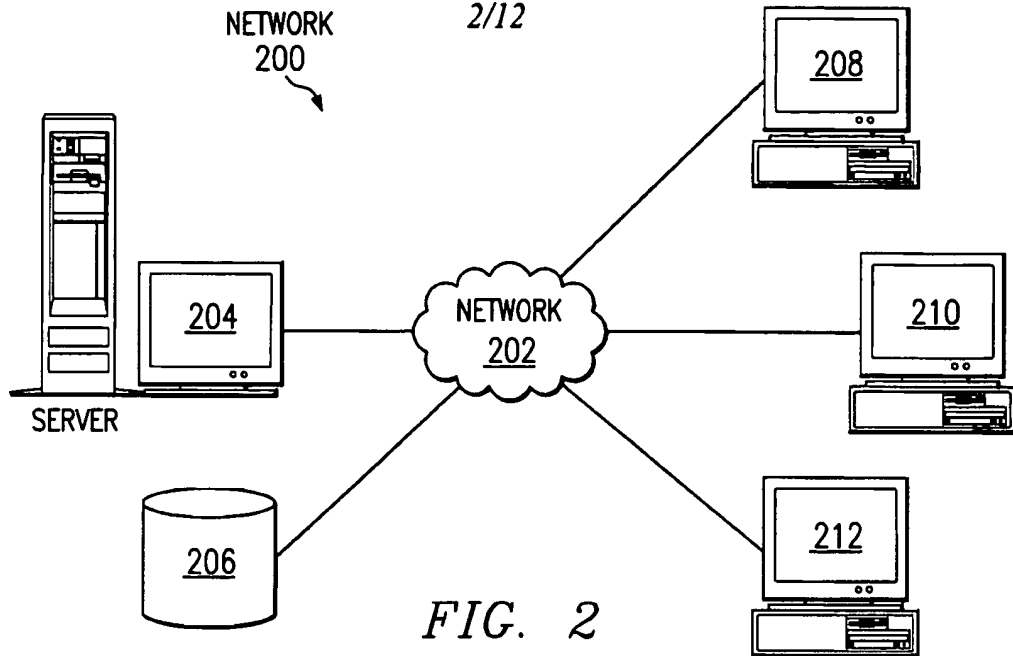
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NETWORK
200

FIG. 2

FIG. 3

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FIG. 4

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FIG. 5

508

WEB

REQUEST
FOR WEB PAGE

WEB PAGE

506

| CLIENT |
| BROWSER |

BROWSER REQUEST

MODIFIED WEB PAGE

PROXY
SERVER

504

502

FIG. 6

605 — USER SELECTS
WEB PAGE

610 — SERVER PARSES WEB
PAGE FOR LINKS

615 — SERVER CHECKS CACHE

620 — SERVER PREFETCHES
LINKED PAGES
NOT CACHED

625 — SERVER GENERATES
THUMBNAILS OF LINKED
PAGES NOT CACHED

630 — SERVER SENDS WEB
PAGE AND THUMBNAILS
TO CLIENT

FIG. 7

RECEIVE REQUEST
FOR WEB CONTENT — 710

715

HAS USER
SELECTED THUMBNAIL
OPTION?

NO

SEND WEB
PAGE WITHOUT
THUMBNAILS

720

YES

PARSE WEB
PAGE FOR LINKS — 725

GET CACHED PAGES AND
PREFETCH LINKED PAGES — 730

GENERATE THUMBNAILS
OF UNCACHED PAGES — 735

CACHE NEW THUMBNAILS — 740

SEND
THUMBNAILS — 750

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FIG. 8

800

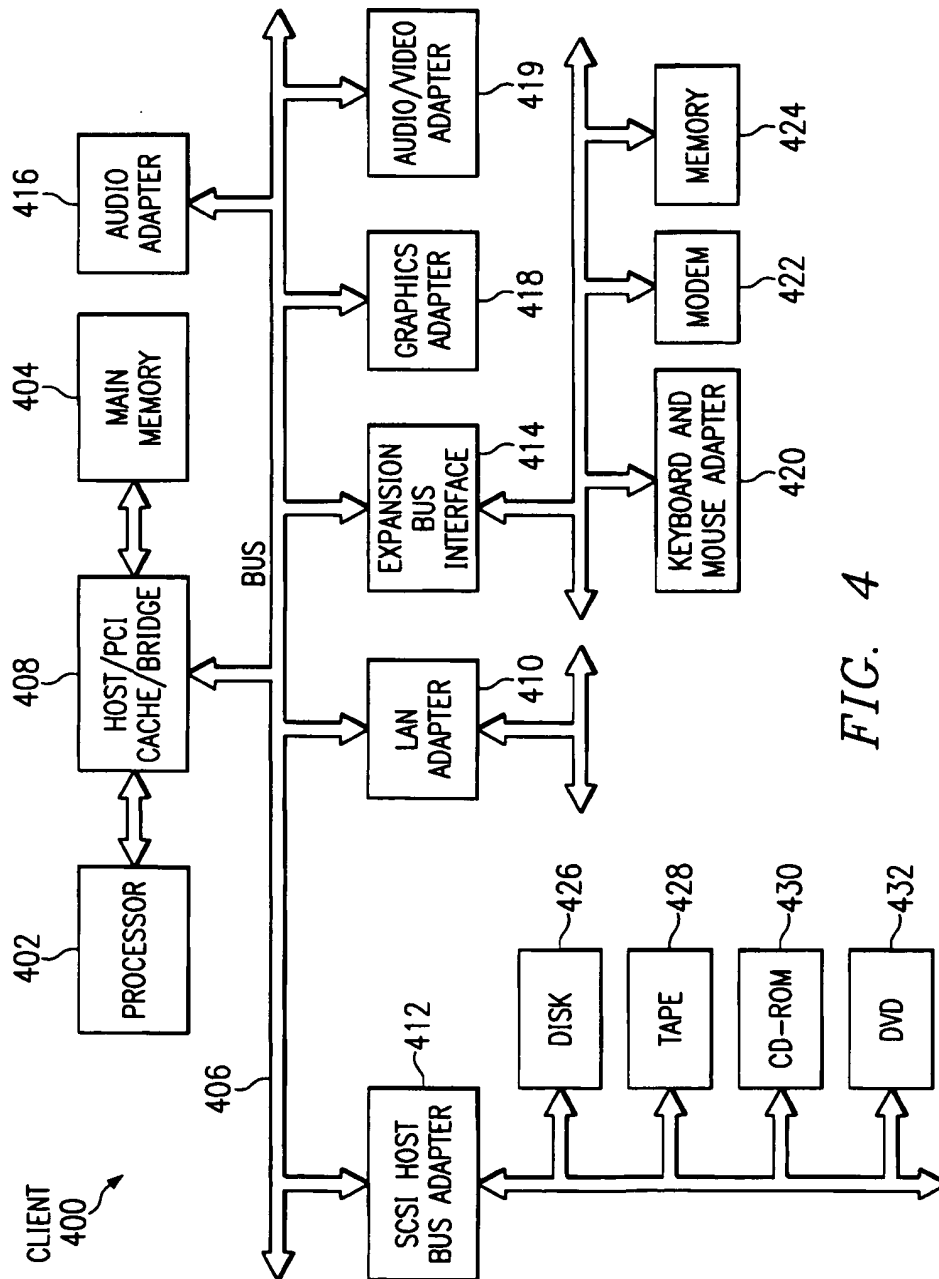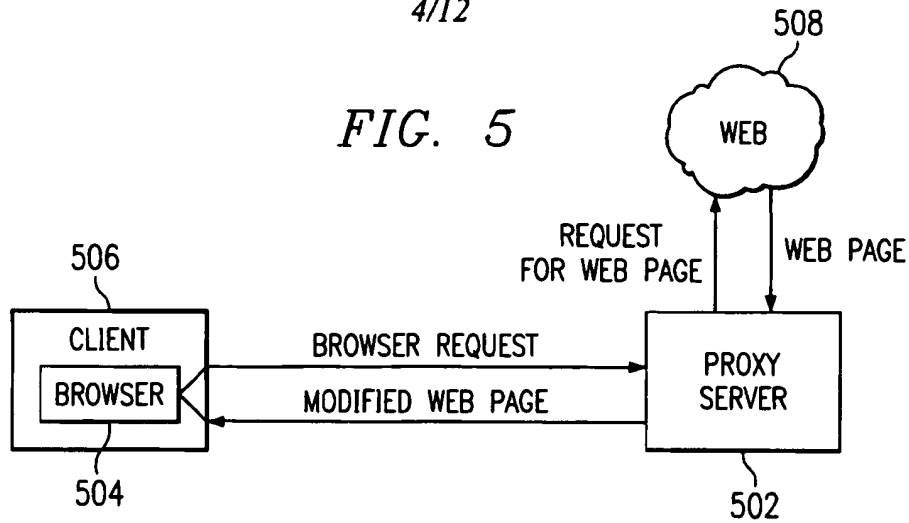AltaVista: Simple Query Mike Paolini–Microsoft Internet Explorer

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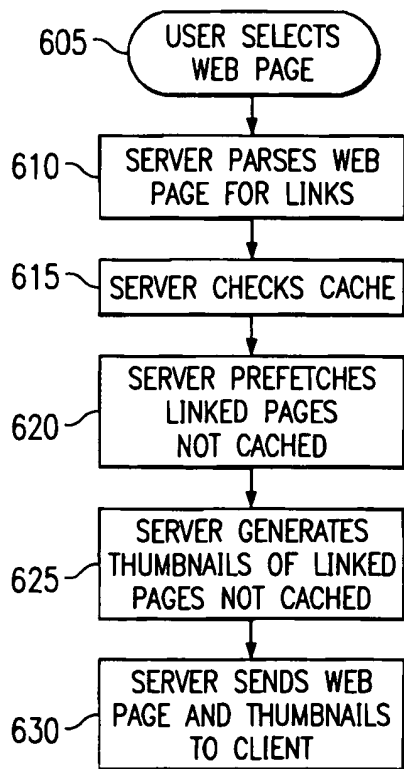Last modified 11-Aug-98-page size 567 bytes-in English [Translate]

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FIG. 9

905 — RECEIVE REQUEST FOR WEB PAGE AND USER CRITERIA

910 — RETRIEVE WEB PAGE

920 — PARSE WEB PAGE FOR USER CRITERIA

930 — PARSE ANY PREFETCHED PAGES FOR USER CRITERIA

940 — APPLY USER CONFIGURED PREFERENCES

950 — CHANGE THE APPEARANCE OF THE WEB PAGE IN RESPONSE TO FINDING CRITERIA IN OTHER WEB PAGES
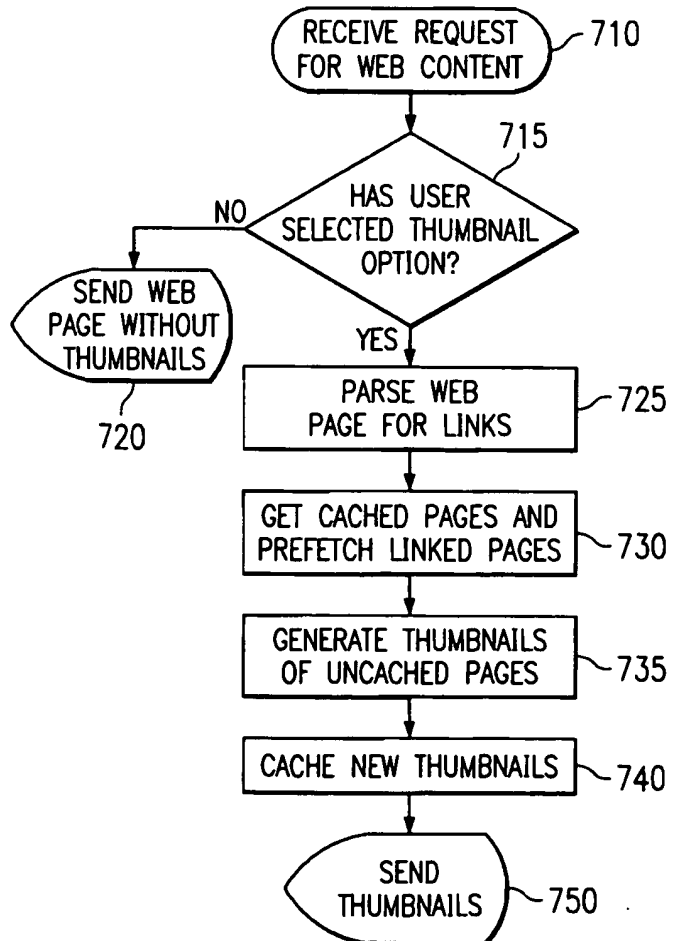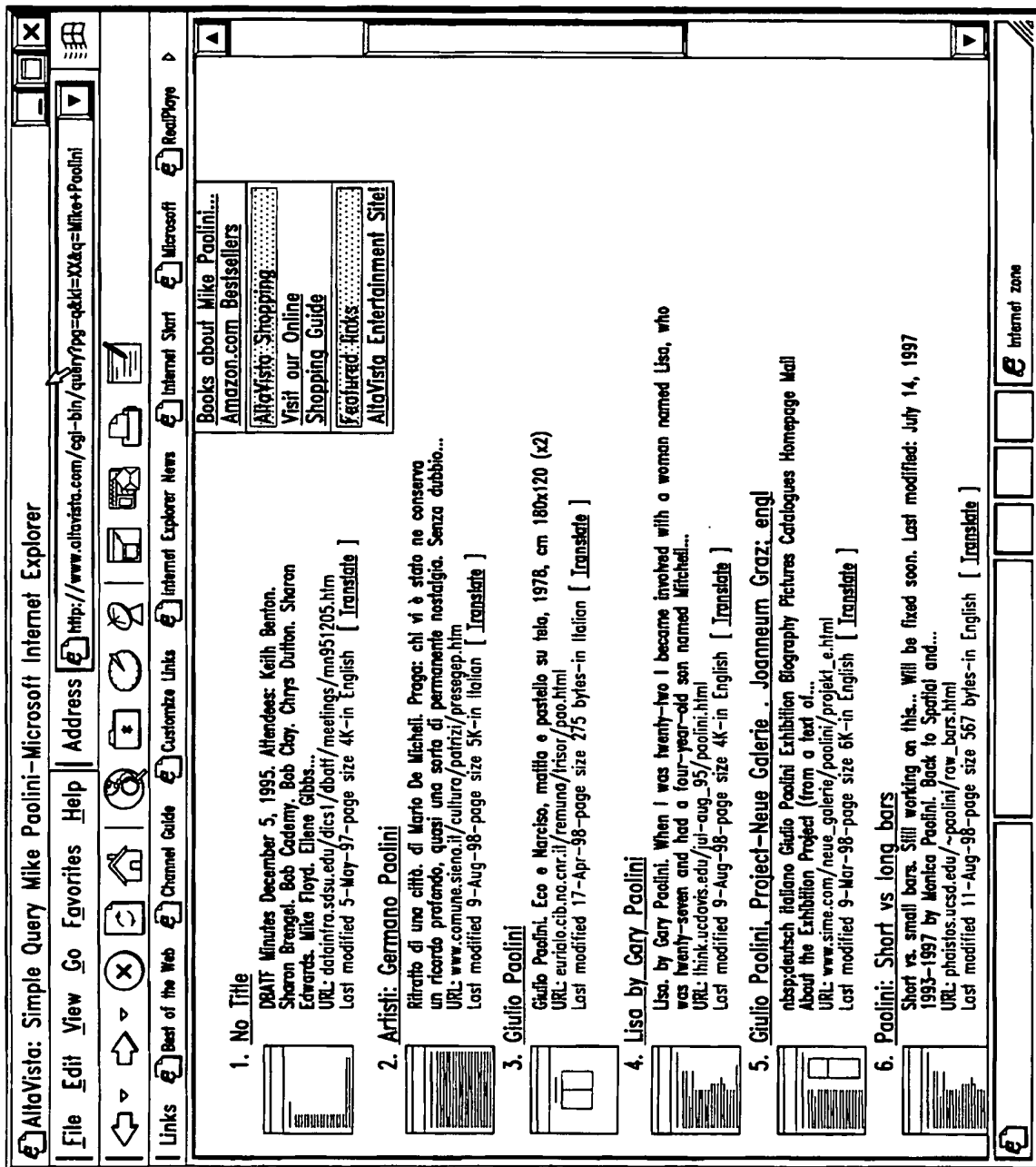
960 — SEND MODIFIED WEB PAGE TO USER

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FIG. 10

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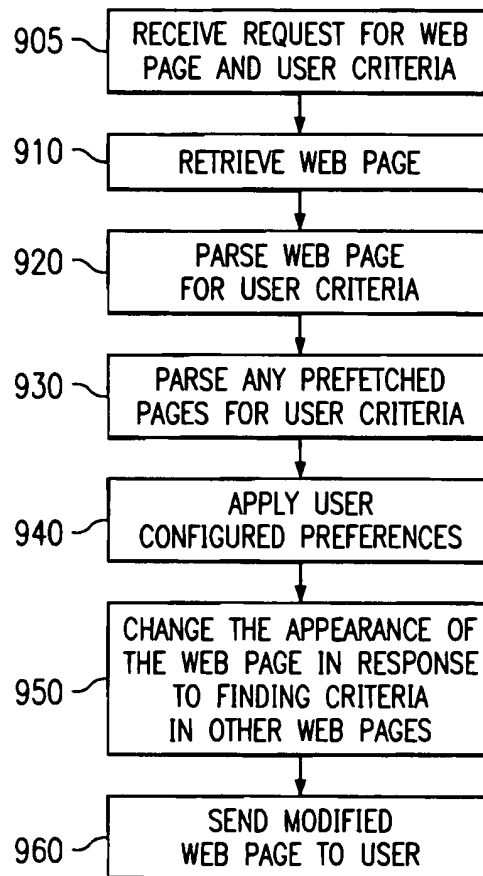1110 — USER CONFIGURES CRITERIA PREFERENCES AND DISPLAY SETTINGS FOR THE NAVIGATION ASSISTANT

1120 — USER ACCESSES WEB PAGE

FIG. 11A

1121 — PARSE WEB PAGE FOR SPECIFIED CRITERIA

1122 — ARE USER SPECIFIED CRITERIA PRESENT ON WEB PAGE?

YES → 1124 — MODIFY WEB PAGE APPEARANCE IN ACCORDANCE WITH USER CONFIGURATION TO INDICATE PRESENCE OF USER SPECIFIED CRITERIA

NO

1126 — HAS USER CONFIGURED DISPLAY SETTINGS WHEN SPECIFIED CRITERIA NOT FOUND?

YES → MODIFY WEB PAGE APPEARANCE INDICATING SPECIFIED CRITERIA NOT FOUND ON WEB PAGE

1128

NO

1130 — DO NOT ALTER DISPLAY

1135 — DOES WEB PAGE CONTAIN LINKS?

NO → B

YES

1150 — FIRST PREFETCHED PAGE IS SCANNED FOR MATCHES TO USER CONFIGURATION

A

TO FIG. 11B

B

TO FIG. 11B

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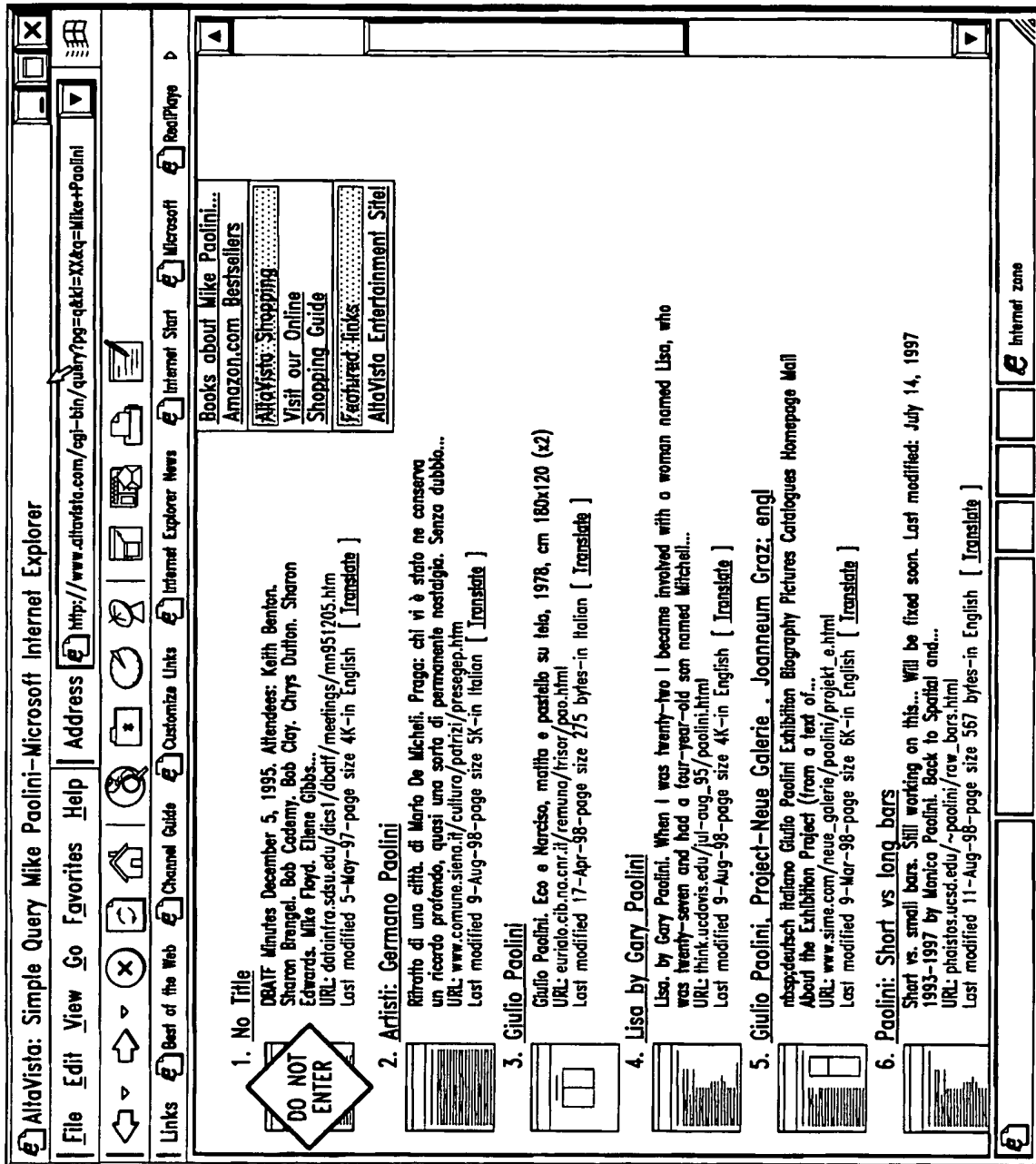Complementary Information Provided from a Server

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FROM FIG. 11A

A

1160

ARE USER
SPECIFIED CRITERIA
PRESENT? — **YES** →

1165

MODIFY WEB PAGE
APPEARANCE IN ACCORDANCE
WITH USER CONFIGURATION
TO INDICATE PRESENCE OF
USER SPECIFIED CRITERIA

NO ↓

1170

HAS USER
CONFIGURED DISPLAY
SETTINGS WHEN SPECIFIED
CRITERIA NOT
FOUND? — **YES** →

MODIFY WEB PAGE
APPEARANCE INDICATING
SPECIFIED CRITERIA
NOT FOUND FOR
PARTICULAR LINK

1175

NO ↓

DO NOT ALTER DISPLAY ~1180

DOES
PREFETCH
CONTAIN ANOTHER
LINK? — **NO** →

1190

FROM FIG. 11A

B

SEND WEB PAGE TO USER ~1193

WAIT UNTIL NEW WEB
PAGE IS LOADED ~1195

YES ↓

NEXT PREFETCHED
PAGE IS SCANNED FOR
CONTENT PREFERENCES

1192

FIG. 11B

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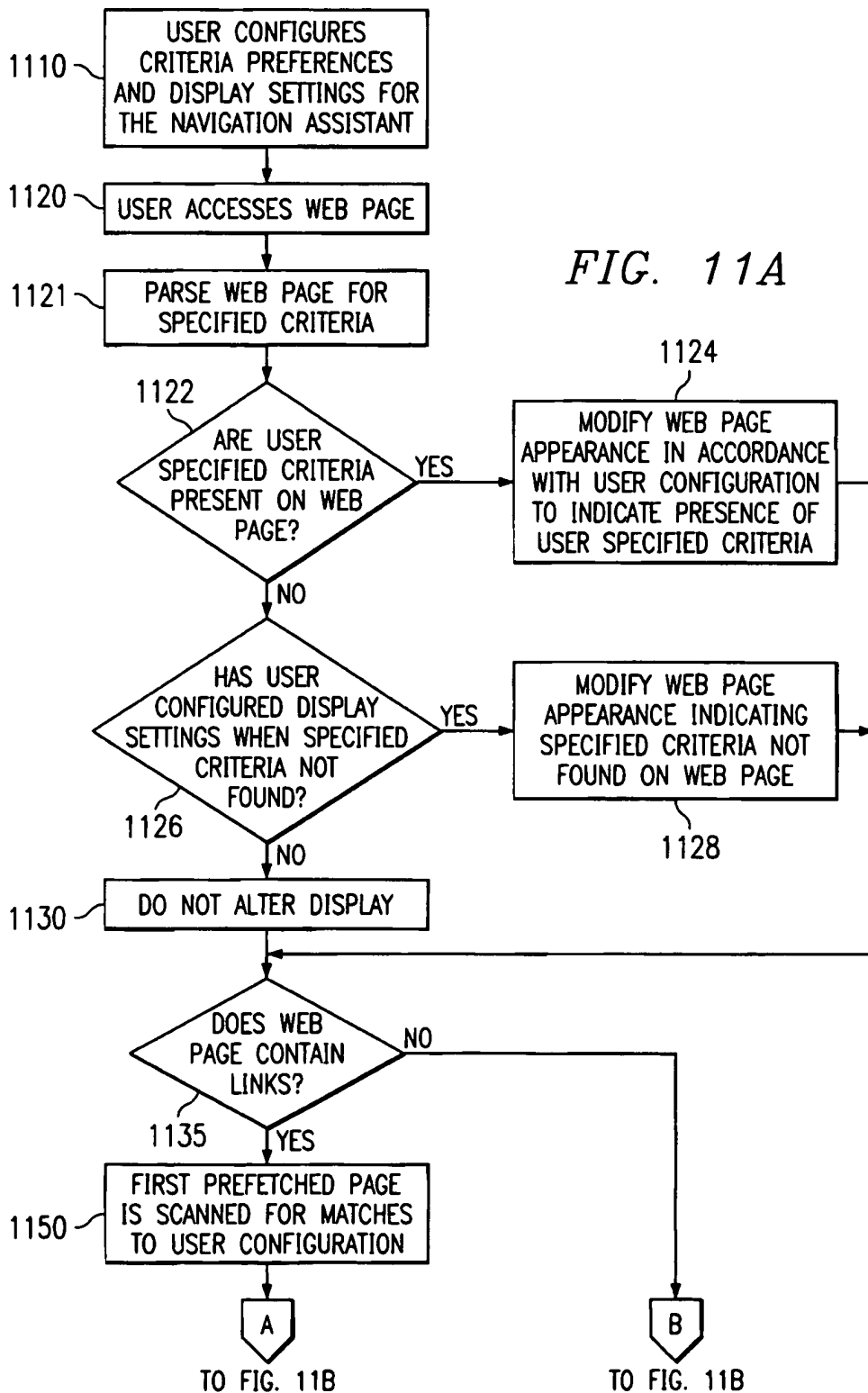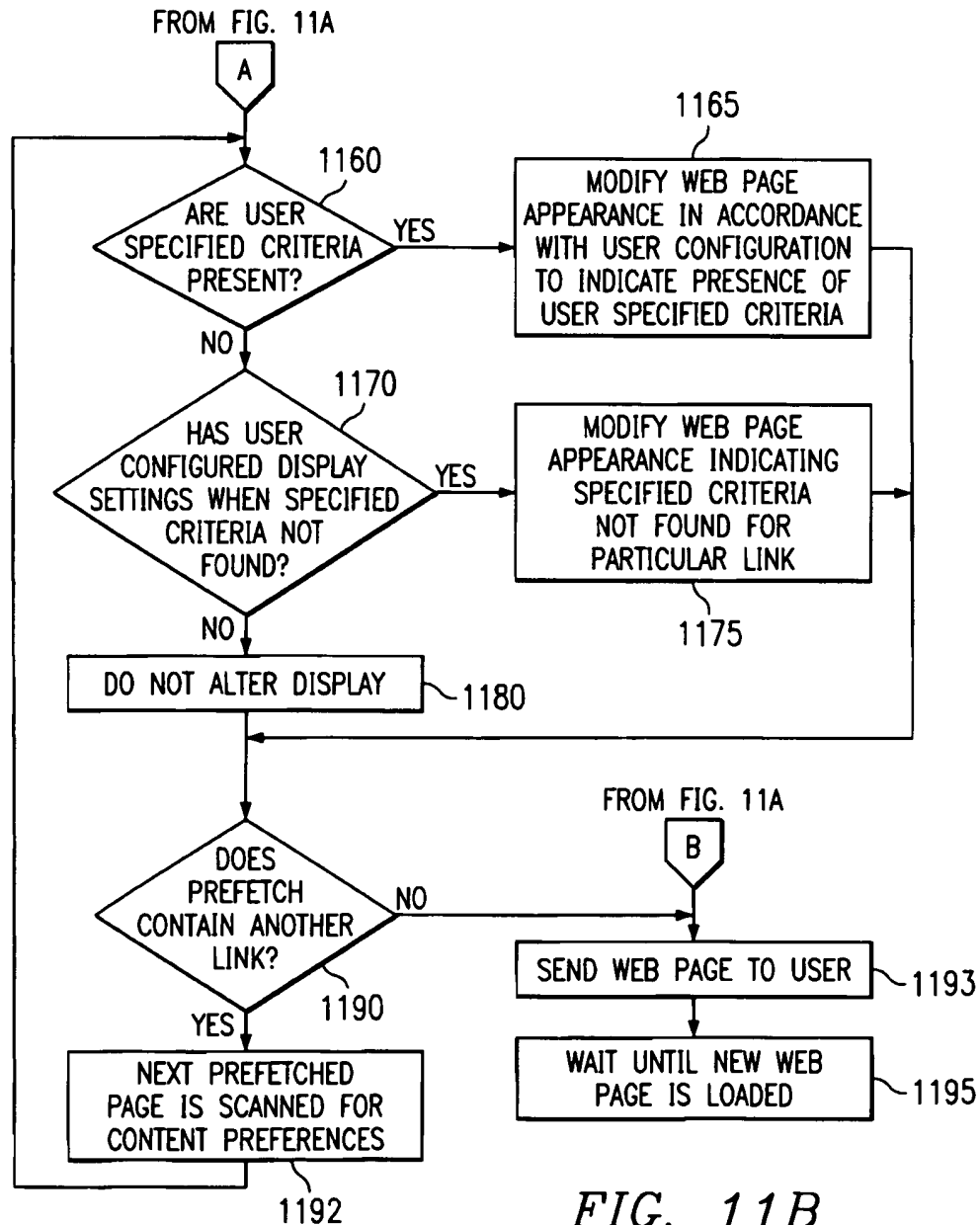Complementary Information Provided from a Server

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FIG. 12

1205
HAS USER CONFIGURED FOR LAYERED PREFETCH?

NO

YES

1210
DOES LINKED PAGE CONTAIN AN EXCESSIVE NUMBER OF BROKEN LINKS?

YES → ALTER DISPLAY TO INDICATE THAT LINKED PAGE CONTAINS AN EXCESSIVE NUMBER OF BROKEN LINKS
1215

NO

1220
DOES WEB PAGE CONTAIN NEGATIVE PREFERENCES?

YES → ALTER DISPLAY TO TO INDICATE WARNING
1225

NO

DOES WEB PAGE CONTAIN MORE THAN A THRESHOLD OF PREFERRED USER CRITERIA?
1230

YES → ALTER USER DISPLAY TO INDICATE LINK EXCEEDS THRESHOLD
1235

NO

DOES WEB PAGE CONTAIN SOME OF PREFERRED USER CRITERIA?
1240

YES → CONFIGURE DISPLAY TO INDICATE PRESENCE OF SOME OF USER'S PREFERRED CRITERIA
1255   **1245**

NO

DOES USER WANT DISPLAY ALTERED TO INDICATE NO MATCH?
1250

YES → ALTER DISPLAY TO INDICATE NO MATCH TO USER PREFERENCES

NO

1260 — DO NOT ALTER DISPLAY

1270
CONTINUE PROCESSING WEB PAGE AND OTHER PREFETCHED PAGES

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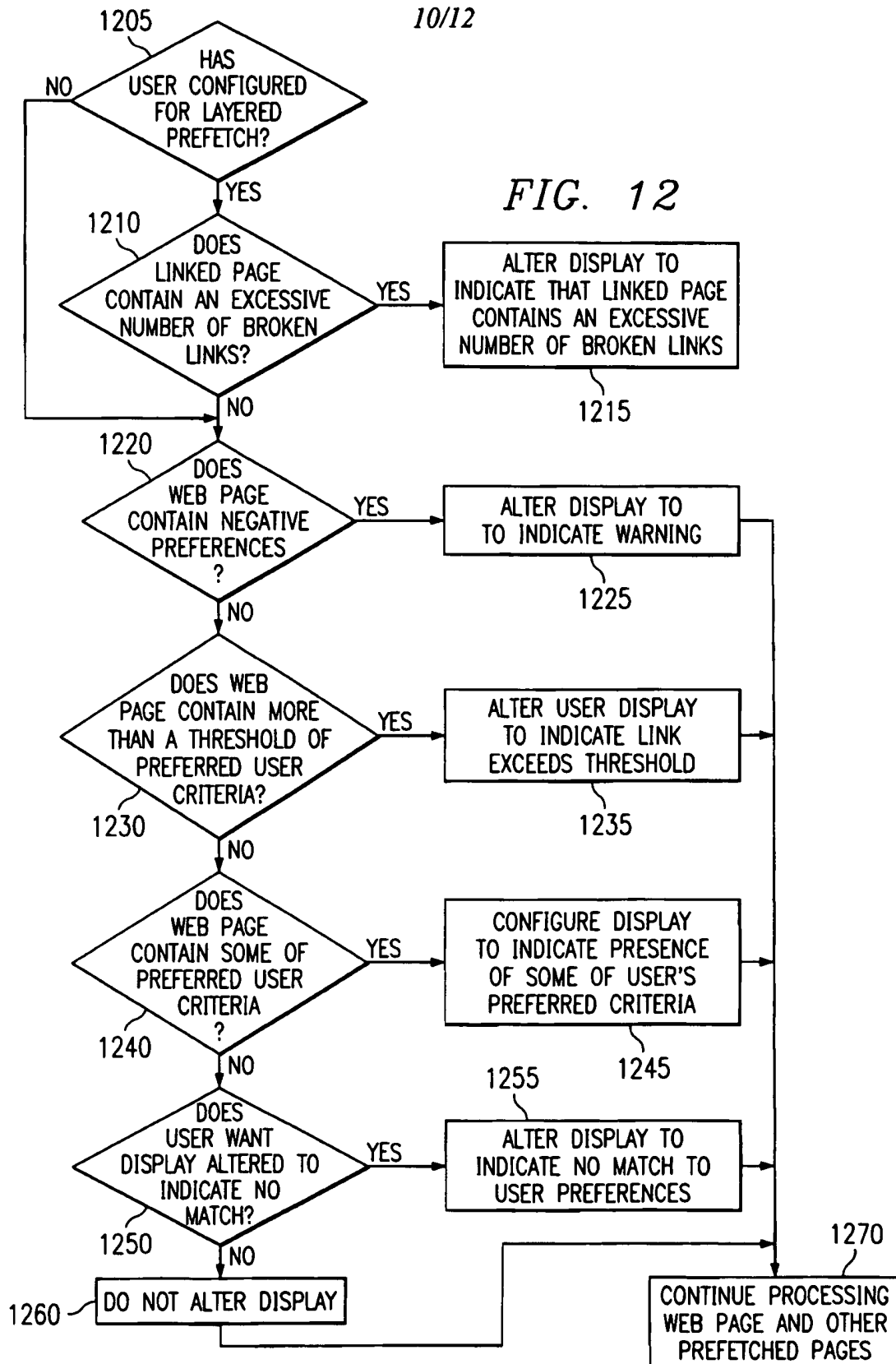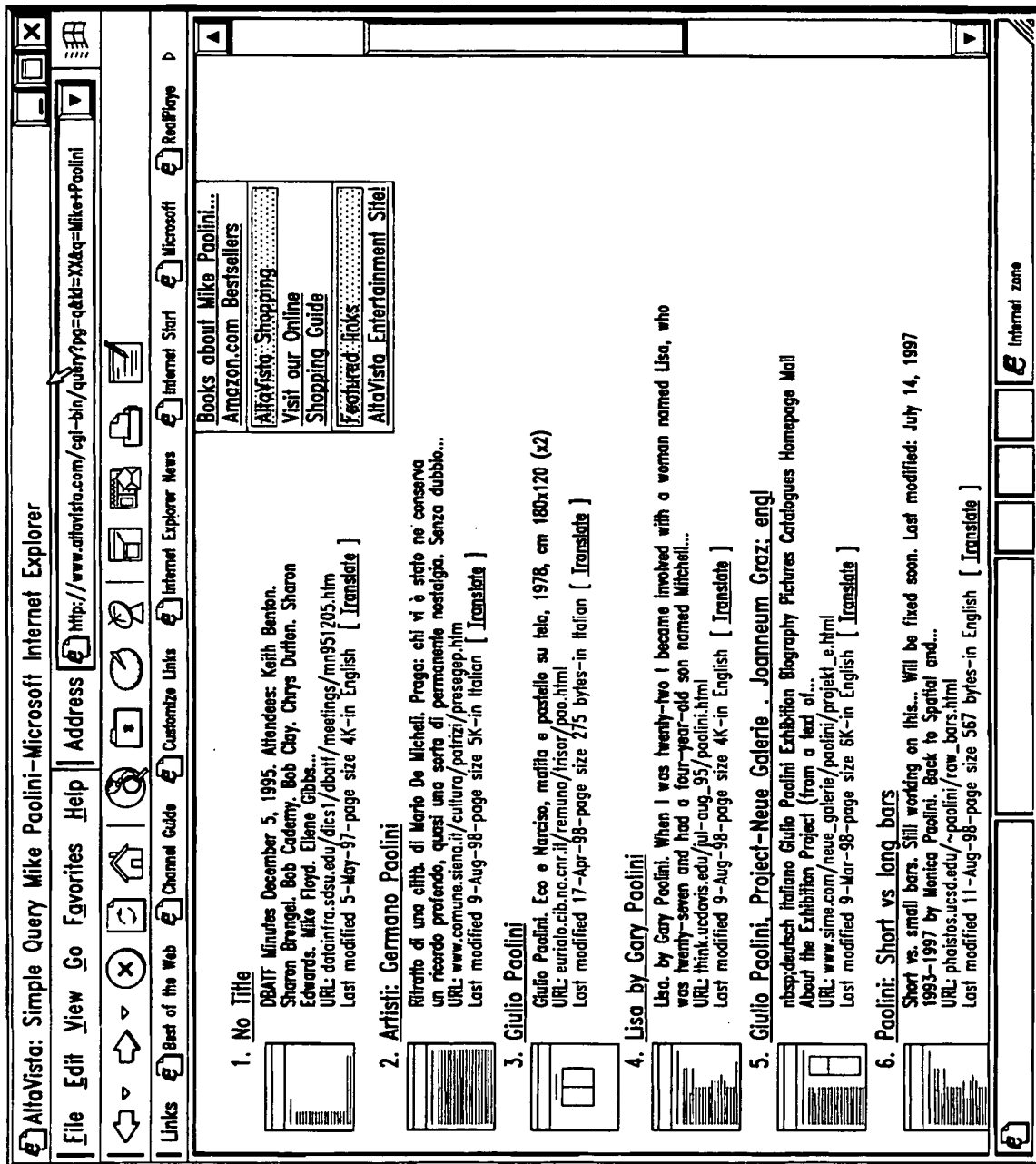
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FIG. 13

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FIG. 14

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